UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/636,037	08/07/2003	Wang-Hsin Peng	120-277	9962

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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/636,037	PENG ET AL.
	Examiner	Art Unit	
	Nguyen Ngo	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>1</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>07 August 2003</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-38</u> is/are pending in the application.

    4a) Of the above claim(s) <u>10-14, 15-25, 26-28</u> is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,3-8,29-31,33-36 and 38</u> is/are rejected.

7) ☒ Claim(s) <u>2,9,32 and 37</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1.   Restriction to one of the following inventions is required under 35 U.S.C. 121:

  I.   Claims 1-9, 29-33, and 34-38 are drawn to regulating the amount of

        information transmitted through a network, classified in class 370,

        subclass 235.

  II.   Claims 10-14, 15-25, 26-28, are drawn to processing arrangement for

        control of communication of packets in a packet network, classified in

        class 370, subclass 412.

2.   The inventions are distinct, each from the other because of the following reasons:

Inventions I. **(1-9, 29-33, and 34-38)** and II. **(10-14, 15-25, 26-28)** are directed to related

processes. The related inventions are distinct if the (1) the inventions as claimed are

either not capable of use together or can have a materially different design, mode of

operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are

mutually exclusive; and (3) the inventions as claimed are not obvious variants. See

MPEP § 806.05(j). In the instant case, the inventions as claimed, claims I. **(1-9, 29-33,**

and 34-38) details of allocating a determined number of transmit opportunities/reserving

bandwidth. Claims II. **(10-14, 15-25, 26-28)** details of selecting between a first packet

and a second packet for transmission to downstream stations. Furthermore, the

inventions as claimed do not encompass overlapping subject matter and there is

nothing of record to show them to be obvious variants.

3.   Because these inventions are independent or distinct for the reasons given

above and there would be a serious burden on the examiner if restriction is not required

because the inventions require a different field of search (see MPEP § 808.02),

restriction for examination purposes as indicated is proper.

4.   During a telephone conversation with Lindsay McGuinnes on 6/13/2007 a

provisional election was made with traverse to prosecute the invention of I, claims 1-9,

29-33, and 34-38. Affirmation of this election must be made by applicant in replying to

this Office action. Claims 10-14, 15-25, and 26-28 are withdrawn from further

consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected

invention.

Claim Objections

5.   Claim 6, 7, 33, 38 are objected to because of the following informalities:

Regarding claim 6, which claims "the tax packet" according to claim 1. However there

is no mention of tax packets in claim 1.   Examiner believes there to be a type and claim

6 to be dependent of claim 2.

Regarding claim 7, which states "... an actual rate of transmission of packets <u>the at</u> <u>least</u> one other station." Examiner believes this to be a typo.

Regarding claim 33, 38, which states"...adjusting the stored tax value <u>the at least</u> one other station". Examiner believes this to be a typo.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6.   Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7.   Claim 6 recites the limitation "the tax packets" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9.   Claims 1, 7, 8, 29, 34 are rejected under 35 U.S.C. 102(b) as being anticipated

by Cidon et al. (US 4926418), hereinafter referred to as Cidon.

Regarding claim 1, Cidon discloses a method of controlling a first rate of transmission

of packets at a station, the station coupled to at least one other station coupled in a ring

arrangement (a method for transmitting packets of data on a communication ring, page

1 cols 5-15 and figure 1), the method comprising the steps of:

determining a credit bandwidth of the at least one other station (nodes), the credit

bandwidth corresponding to a second rate of transmission of packets allocated to the at

least one other station (indicate to each of the nodes on the ring a first corresponding

maximum number of packets (credit bandwidth) that each node is permitted to transmit

in a corresponding time interval, col3 lines 29-34);

transmitting available packets at the station to downstream stations in the

network (forwarding a control message on the ring, col3 line 25-30 and col5 lines 49-57

and figure 5); and

reserving bandwidth (number of packets permitted to transmit) for the at least

one other station for each available packet (control message/SAT message forwarded,

col5 lines39-58) that transits the at least one station (node), wherein an amount of

reserved bandwidth is determined in accordance with the credit bandwidth of the at

least one station (col1 lines 25-40).

Regarding claim 7, Cidon discloses the method of claim 1, further comprising the step

of adjusting the credit bandwidth (regulating the data input in each direction of the ring,

col5 lines 20-24) allocated to the at least one other station (nodes in the ring) in response to an actual rate of transmission of packets the at least one other station (dependent on the control message and how it is forwarded).

Regarding claim 8, Cidon discloses the method according to claim 1, wherein an intermediate station (another node on the ring, figure 1) is disposed between the station and the at least one other station, the intermediate station allocated an intermediate bandwidth credit (maximum number of packets (credit bandwidth) that each node is permitted to transmit in a corresponding time interval, col3 lines 29-34), the method comprising the steps of provisioning a bandwidth to the intermediate station corresponding to the intermediate bandwidth for each transmission to the at least one other station that transits through the intermediate station (col3 lines 25-35).

Regarding claim 29, 34, Cidon discloses a station in a unidirectional ring architecture (figure 1) comprising: means for guaranteeing bandwidth to a downstream station that is downstream from the station on the unidirectional ring, including means for allocating a determined number of transmit slots to the downstream station for each packet that transits through the downstream station (forwarding a control message on the ring to indicate to each of the nodes on the ring a first corresponding maximum number of packets that each node is permitted to transmit in a corresponding time interval, col3 lines 25-35).

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

12.   Claims 3, 4, 5, 30, 31, 33, 35, 36, and 38 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Cidon et al. (US 4926418), hereinafter referred to as Cidon.

Regarding claims 3, 4, 5, Cidon fails to specifically disclose how the credit bandwidth

(number of packets permitted to transmit) is determined. Cidon however discloses of the

need for spatial reuse for a more efficient system (col1 lines 30-36). It is further well

known in the art that bandwidth (amount of data) is specified to a node (station) in a

system in accordance with such system parameters as reserved bandwidth/guaranteed

bandwidth of the node. Thus, it would have been obvious to a person skilled in the art

at the time the invention was made, to incorporate the well known concept of

determining a credit bandwidth of a node according to reserved/guaranteed bandwidth

of the node into the method for transmitting packets of data on a communication ring as disclosed by Cidon, in order to efficiently utilize the bandwidth of a system.

Regarding claim 30, 31, 35, 36 Cidon fails to specifically disclose means for storing a tax value for each of a plurality of other stations and means for determining a total tax associated with forwarding packets. Cidon however discloses the need to provide a buffer insertion ring that will operate with multiple control messages. Thus it would have been obvious to a person skilled in the art to store a tax value (maximum number of packets that each node is permitted to transmit in a corresponding time interval, col3 lines 29-34) for each station so that each node may correctly and efficiently determine the number of packets it is allowed to transmit. It would further be obvious to a person skilled in the art to determine the total tax (total number of packets sent from all nodes in the ring) with forwarding packets (SAT messages) in order to efficiently determine the total bandwidth usage in a communication system from a source node to a destination node.

Regarding claim 33, 38, Cidon fails to specifically disclose providing a feedback means for adjusting the stored tax value. However it is well known in the art, that a system may adjust it's bandwidth usage depending on system conditions. It would have thus been obvious to incorporate a feedback means to adjust the stored tax value dependent

on bandwidth usage in order to efficiently utilize the bandwidth of a system in any

condition.

Allowable Subject Matter

13.   Claims 2, 9, 32, and 37 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

a) Cidon et al. (US 5467352), Method and apparatus for improved throughput in a

multi-node communication system with a shared resource

b) Uzun et al. (US 7016969), System using weighted fairness decisions in spatial reuse

protocol forwarding block to determine allowed usage for servicing transmit and transit

traffic in a node

c) Knightly (US 2003/0163593), Method and system for implementing a fair, high-

performance protocol for resilient packet ring networks

d) Hauris et al. (US 5517498), Spatial reuse of bandwidth on a ring network

e) Tamaka et al. (US 5339314), Packet data transmission unit having occupied, idle, and released states therefor

f) Mor et al. (US 2002/0018481), Resource reservation in a ring network

g) Denecheau et al. (US 20030035436), Method of allocating bandwidth on request to the stations of a local area network

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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